**MATHEMATICS**

**GEOMETRY OF STRAIGHT LINES**

**TERMS**

|  |  |
| --- | --- |
| **adjacent** | Next to; alongside. |
| **complementary** | Adding up to 900 |
| **corollary** | A theory stated from a different starting point |
| **revolution** | Going once right around a circle |
| **supplementary** | Adding up to 180 |

**RULES**

1. Adjacent angles on a straight line are supplementary (add up to 1800

Example

D E F

300 x 420 2x

A B C

ABC is a straight line. Determine the value of x

**300 +x + 420 + 2x = 1800 (Supplementary *L*s)**

3x + 720 = 1800

3x = 1800 – 720  = 1080

x = 108/3 = **360**

1a (Corrolary) If adjacent angles are supplementary they are located on a straight line.

Example

D E

500 800  200

A C

B

Prove that ABC is a straight line,

*L*ABD + *L*DBE + *L*EBC = 1800

ABC is a straight line (Adjacent *L*s are supplementary.

1. The sum of all angles around a common point is 3600

Example

Calculate the value of x in the diagram below

x +550

1500 x

950

1500 + 950 + 550 + x + x = 3600 (Angles around a common point)

3000 + 2x = 3600

2x = 3600 - 3000  = 600

x = 60/2 = 300

1. When two straight lines cross the vertically opposite angles are equal.

Example

1

3 4 (300)

2(1500)

*L*1 + *L*4 = 1800 (Supplementary)

*L*1 = 180 -30 = 1500 = *L2*